



### **Definition**

The manipulation of species composition, stand structure and stocking by cutting or killing selected trees and understory vegetation

### **Purpose**

- To increase the quantity and quality of forest products, e.g., sawtimber, veneer, wood fiber, poles, pilings, maple syrup, naval stores, nuts and fruits
- To harvest forest products
- To initiate forest stand regeneration

- To reduce the potential of damage from wildfire, pests, and moisture stress
- To restore natural plant communities
- To achieve a desired understory plant community
- To improve aesthetic, recreation, and open space values
- To improve wildlife habitat
- To improve water conservation and yield
- To achieve a desired level of crop tree stocking and density
- To increase carbon storage in selected crop trees
- For renewable energy production
- To alter light regimes or obtain wood for the production of non-timber forest products

### **Condition Where Practice Applies**

All forest land where improvement of forest resources is needed.

### **Silvicultural Systems**

A silvicultural system is a planned series of treatments for tending, harvesting, and re-establishing a forest stand. The type of silvicultural system selected depends on many factors. These may include the owner's objectives for the woodlot, the environmental conditions, and the tree species present and desired for the future.

### **Types of Silvicultural Treatments**

Regeneration or reproduction treatments are applied to mature stands that are ready for harvest. These treatments remove the large trees as efficiently as possible while creating environmental conditions favorable for the establishment of a new crop of trees. Concern for the immediate regeneration of new trees is the most significant difference between silviculture and exploitative

logging. To encourage sun-loving species like yellow-poplar in the new stand, the owner and the forester might select an even-aged system. To encourage species like maple that grow well in the shade, an uneven-aged system might be selected. Species like northern red oak regenerate well in partial shade; systems that include gradual removal of the large trees favor oak.

## **Commercial Timber Harvests**

### **Getting Started**

The decision to initiate a timber harvest can often be bewildering and even frightening. As a forest landowner you are responsible for the activities that take place on your property. However, there are educational and technical programs available to assist you in the selling of your forest products by calling the phone numbers of the organizations listed in this brochure. A nine-part educational video series is available at West Virginia public libraries or through these various organizations.

### **Professional Assistance**

Woodland owners can benefit greatly by utilizing professional forestry assistance. Those benefits typically include a well-planned harvesting operation, utilization of better forest management practices, and realizing a higher sale price. In fact, a study conducted by the U.S. Forest Service showed that landowners who have secured professional assistance and used the competitive bid process have received 47 percent more money than initially offered, with only about one-half the amount of timber being harvested.

Assistance can be obtained from West Virginia Division of Forestry (WVDOP) service foresters, industrial landowner assistance program foresters, private consulting foresters, and industrial procurement foresters.

Like any other group of professionals, foresters have a wide variety of skills, experience, personalities, attitudes, and equipment. Services and costs may vary. As you talk with various foresters, try and match the forester's experience and expertise with your goals and objectives for your forest stand. Talk to them and get an understanding of their character, reliability, sense of stewardship and willingness to understand and meet your goals. **Request and follow up on references from the individuals you talk with.**

There are significant differences between the types and amounts of services provided by each. Free service is offered by service foresters and industrial landowner assistance program foresters, who are impartial third parties with the primary responsibility of assisting private landowners with management and sale of timber. Consulting foresters can offer the same types of services but will charge a fee. Industrial procurement foresters also offer similar assistance to private landowners at no charge, but will most likely request the opportunity to purchase the timber themselves. Each type of forester has advantages and disadvantages.

In order to be assured of a top-quality professional forester, the landowner should ask some important questions before entering into a contract with a professional forester. The information the landowner should seek includes:

- Educational background: college degrees, continuing education, etc.
- Certification held; i.e. certification for the Forest Stewardship Program, etc.
- W.V. Registered Professional Forester status
- Experience
- References from past clients

- Detail of fees and services provided

Although a negative response to any of the above questions (particularly certificates held and professional registration) does not necessarily imply that the forester is not an honest, competent professional, it does give the landowner a signal to review some of the other information more closely.

As with any other type of business transaction, a written contract or employment agreement is needed. This agreement should clearly stipulate what services are to be provided as well as the fees and payment schedule for those services.

### **Ownership & Boundaries**

Before any planning can occur, it is very important to determine if the land is owned by one or several parties. If more than one party is involved, all parties must agree to the sale arrangements. Before beginning a timber sale, be certain that all parties are aware of the boundaries. Once the boundaries are determined, they should be clearly marked and maintained.

### **Have a Plan**

Developing a forest management plan provides you, the landowner, a means of identifying what can be done to enhance and protect the values and aspects of your property that are most important to you. Your professionally prepared plan should give a description of the property, a list of goals and objectives that you have for the property and a schedule of activities to be performed on the property to help realize these goals.

### **Know the Law**

In 1992, the West Virginia Legislature passed the Logging Sediment Control Act (LSCA). This law sets forth requirements that loggers are to follow to minimize

sedimentation and soil erosion. The law also requires that all logging operations be registered and supervised by a person who has completed training with the West Virginia Division of Forestry (WVDOF).

### **Before a logging operation begins, the operator must:**

- Obtain a timbering license from the WVDOF
- Obtain logger certification by completing the WVDOF training program
- File a timbering operation notification with the WVDOF
- Post the operation with a sign consisting of the logging company name and timbering license number



### **Best Management Practices**

The harvesting of timber has only a small short-term impact on forest streams and long-term site productivity if the skid trails, truck haul roads, and landings are well planned and properly constructed. However, if road systems are not carefully located and constructed, erosion will occur, streams can be polluted, and long-term site productivity is jeopardized. West Virginia has established timber harvesting



guidelines, commonly referred to as Best Management Practices (BMPs). These guidelines help to:

- control erosion on disturbed areas,
- minimize the amount of eroded soil material entering forest streams,
- protect the habitat of aquatic life, and
- ensure good stewardship and long-term site productivity.

These common sense soil and water conservation measures control water so that erosion is minimized and water quality and site productivity are protected. BMPs incorporate five basic principles:

## **1 - PLAN THE JOB**

Time spent planning and laying out roads, trails, and landings will prevent future problems. Careful planning allows you to fit the road to the land and keep grades moderate. Truck haul roads should be constructed under a 10% grade where possible. Grades up to 15% should be no more than 200 feet. Grades on skid trails should not exceed 15%, with the exception of short, steep distances not exceeding 20%.

## **2 - STAY AWAY FROM STREAMS**

Try to plan and build roads and landings at least 100 feet from streams. Keep equipment out of streams. Leave a strip of vegetation along streambanks to filter out eroded soil particles.

## **3 - USE CARE CROSSING STREAMS**

When a stream must be crossed, use a culvert, bridge, or well-built ford. Cross the stream at right angles.

## **4 - CONTROL WATER IN SMALL AMOUNTS**

Use ditches, culverts, broad-based dips, and grade breaks to handle water before it reaches destructive forces. Maintain drainage structures during and after logging.

## **5 - RETIRE ROADS AFTER LOGGING**

Drain, grade and seed roads and landings as soon as possible. Limit access between December and April to prevent road damage.

### **Have a Contract**

All timber sales should be entered into with a written contract. This contract should list in detail the responsibilities of each party. Details such as: legal description of the property, description of the timber being sold, method of payment, contract length, and special developments, restrictions, etc.

### **Know Your Tax Implications**

There are a wide variety of tax responsibilities that can result from the sale of timber or other forest products from your property. You should become informed on current tax laws in addition to environmental laws. Many problems can be avoided by contacting forestry professional and a certified public accountant (CPA) prior to a timber sale. Severance tax, property taxes and income taxes all can be affected by the sale of timber. It is recommended that landowners understand the laws and regulations that exist and how they can be affected by them.



### **Choose a Quality Logger**

Selecting a professional logger to harvest your timber is an important decision and should be made thoughtfully. The person you choose to perform the harvest can perpetuate the many values of your forest virtually forever, or could badly damage the land and impair its ability to produce financial rewards, as well as personal and aesthetic enjoyment.

### **Woodland Protection**

It is important for landowners to recognize threats to the health and productivity of their woodlands. Some of these threats, especially those posed by damaging wind, drought, and other weather conditions, cannot be controlled by landowners. However, landowners can participate in the protection of their woodlands from insect pests, diseases, uncontrolled fire, and livestock grazing.

### **Uncontrolled Fire**

Uncontrolled fires, or wildfires, may cause considerable damage to unprotected woodlands. In West Virginia, rapidly

spreading and dangerous crown fires that kill mature trees outright are usually rare. However, ground fires are prevalent, especially in early spring before trees have foliated and in the fall after leaves have fallen. Ground fires may kill saplings and damage the bark and trunks of mature trees. Scars, or cat-faces, left on tree trunks by even relatively “cool” fires may significantly reduce the value of timber cut from the trees. Fire damage also reduces tree growth rates and makes trees more susceptible to insects, diseases, and drought.

### **Livestock Grazing**

Livestock grazing may be the most damaging and yet most preventable of all threats to woodland health and productivity. Cattle and other livestock may cause serious immediate damage to seedlings, saplings, and ground vegetation; what is not browsed by livestock will be trampled. In just a few years, the understory may be completely absent or replaced by less valuable species, such as ironwood and hawthorn. At the same time, livestock compact forest soils which in turn damages mature trees. Within 10 years, continued grazing causes weakening and mortality of the trees.

In addition, woodlands make very poor pasture; studies have shown that livestock lose weight when grazed in woodlands. Therefore, grazed woodlands result in loss of both livestock and natural resources values.

### **Other Concerns**

The method, felling direction and timing of tree cutting for harvesting should facilitate efficient and safe tree removal and protect sensitive areas such as vernal pools, riparian zones, cultural resources and structures.

Slash and debris left on the site after treatment will not present an unacceptable fire, safety, environmental, or pest hazard. Such remaining material will not interfere

with the intended purpose or other management activities.

Potential landowner and operator liability should be assessed before forest stand improvement activities begin.

### **Wildlife**

Forest stand improvement provides excellent opportunities to improve wildlife habitat for some species by favoring tree species that provide food and/or cover for desired wildlife. Refer to West Virginia conservation practice standard 645 - Upland Wildlife Habitat Management for information regarding the daily and seasonal requirements for selected wildlife species.

The practice should be timed to minimize disturbance of seasonal wildlife activities.

Consider wildlife food and cover needs when making modifications to forest composition and tree spacing.

Consider retention of selected dead and dying trees, including down material, to enhance wildlife habitat values.

Consider environmental concerns such as threatened and endangered species and natural areas.

### **Operation and Maintenance**

Periodic inspections during treatment activities are necessary to ensure that objectives are achieved and resource damage is minimized. Follow-up and ongoing management activities will be needed to obtain desired results. Protect trees and shrubs from destructive grazing.

### **Where to Get Help**

If after reviewing this fact sheet you would like technical assistance with completing a timber harvest on your property, you should contact a professional forester to obtain specific recommendations for your woodland.

Assistance can be obtained from West Virginia Division of Forestry (WVDOF) service foresters, industrial landowner assistance program foresters, private consulting foresters, and industrial procurement foresters.

**For information on where to obtain this type of assistance, contact your local NRCS office at \_\_\_\_\_.**

**Note: The information in this fact sheet does not meet the plans and specification requirements of WV NRCS Practice Standard 666 – Forest Stand Improvement**

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